

HOW LUMBER PRICE CHANGES AFFECT SAWLOG VALUES

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WHAT'S HAPPENING TO THE SAWMILLS?

IF THE VALUE of hardwood lumber had increased at the same rate as the cost of producing it, the countryside would not be dotted with the remnants of so many abandoned sawmills. This is especially true in the Appalachian region, where some 2,800 sawing and planing mills (about 40 percent of the operating plants) went out of business during the period 1948-58. And this trend is still continuing.

In general, the very large and the very small mills are disappearing and the intermediate-size mills are becoming more mechanized and automated. But even with improved efficiency, most mills are experiencing a declining margin between operating costs and income. Therefore it has become imperative for sawmill owners and operators to be more cost-conscious and to obtain a better understanding of their particular cost-profit situations.

One way to achieve this understanding would be through a better estimation of true sawlog value and a more precise knowledge of how changing hardwood lumber prices affect sawlog value.

In 1964, the U.S. Forest Products Marketing Laboratory of the Northeastern Forest Experiment Station began evaluating

the changes in hardwood lumber prices in relation to their effect on the Appalachian hardwood sawmill industry. The thought was that such a study might provide additional clues to the causes of the rapid decline in the number of operating sawmills and the generally unfavorable rate of profit in this industry.

Sawlogs were selected as a basis for analysis because researchers at the Laboratory wanted to determine the composite change in value for all lumber produced from each grade and species of log over the 10-year period, 1955-64—not just the change in value of certain lumber grades.

They recognized that changes in price of any individual grade of lumber have only a limited influence on the total lumber value recovered from a log; but, by calculating the combined dollar value of all lumber grades recovered from a log, they were able to measure the total effect of lumber price changes according to the proportion of the log that the grades represent.

STUDY TECHNIQUES

The product value of any sawlog is determined from the combined value of the products that can be produced from it; in this case, factory-grade lumber. If we knew the proportion of lumber of each grade contained in a log and the market prices from lumber of those grades, we could then determine the weighted-product value or lumber-recovery value.

In our study, we selected the U.S. Forest Products Laboratory hardwood log grades from standard lumber as the basis for evaluating log quality. A description of these log grades—and tables of lumber-grade-yields by species, diameter, and grade of log—is provided in Forest Products Laboratory Report D1737.¹

We have found that the average predicted lumber-grade yields in Report D1737 are exceptionally accurate for factory-

¹ United States Forest Products Laboratory. HARDWOOD LOG GRADES FOR STANDARD LUMBER. U.S. Forest Serv. Forest Prod. Lab. Rpt. D1737. 66 pp., illus. 1959.

lumber-grade logs of the species covered in our study. Preliminary results from a study conducted by the Forest Products Marketing Laboratory at Appalachian sawmills, using the log grades in Report D1737, indicated that predicted grade yields of Common-and-Better lumber were generally within 1 percent of actual lumber yields.²

The *Hardwood Market Report*³ was selected as the source of lumber prices for our study. We believe that it represents the most widely accepted list of lumber-price quotations for the Appalachian Region. The *Hardwood Market Report* prices represent estimates of average regional lumber prices in carload quantities of random widths and lengths, rough, air-dried, f.o.b. mills, Johnson City, Tennessee area.

By using the hardwood log grades for standard lumber, with their associated average lumber-grade-yields, and the published lumber prices, we were able to calculate lumber-recovery values for each major species and log grade of Appalachian hardwood sawlogs. After the lumber-recovery values were tabulated, they were plotted for the 1955-64 study period and the resulting line graphs were analyzed and compared with the hardwood-lumber price curves.

LUMBER-RECOVERY VALUE

The lumber-recovery value represents the value of lumber that can be sawed from the average sawlog of a given log grade and species. This recovery value is determined by multiplying the predicted average lumber-grade-yields for the log grade by the respective lumber prices and then summing these products.

An illustration of calculations for grade-3 red oak sawlogs is given in table 1. The lumber-grade yield data used represents the average for grade-3 red oak logs from Report

² Data on file at Forest Products Marketing Laboratory, NE. Forest Exp. Sta., U.S. Forest Serv., Princeton, W. Va.

³ Hardwood Market Report. WEEKLY LUMBER NEWS LETTER, published by Abe Lemsky, Memphis, Tennessee Vols 22-21 1954-64

Table 1.—Sample determination of lumber-recovery values
for grade 3 red oak sawlogs ¹

Lumber grades	Grade yield	Lumber price	Product value
	<i>Percent</i>	<i>Dollars/ M bd. ft</i>	<i>Dollars/ M bd. ft.</i>
First-and-Seconds	0.8	200	1.60
Selects	.6	190	1.14
No. 1 Common	16.8	108	18.14
No. 2 Common	23.8	77	18.34
No. 3A Common	12.2	67	8.17
No. 3B Common	43.5	34	14.79
Timbers & Sound Square Edge	2.3	67	1.54
Total	100.0		63.72

¹ Lumber-recovery value for grade 3 red oak logs would be \$63.72 per thousand feet board measure under the quoted lumber values used in this illustration.

D1737. By this method the lumber-recovery value for sawlogs of a stated grade and species is determined in terms of dollars per thousand feet, board measure.

Board measure is used because lumber-recovery values for sawlogs deal with the volume of lumber actually sawed from the logs. However, if log-rule volumes are used in conjunction with lumber-recovery values to estimate sawlog value, overrun must be taken into account. For instance, if for a given group of grade-3 red oak logs the expected overrun amounted to 25 percent and the average lumber-recovery value was \$64.68, the value of these logs would be calculated at \$64.68 times 1.25, or \$80.85 per thousand board feet, log-rule estimate.

It should also be noted that all lumber-recovery values calculated in this study represent the average for the respective log grades. We realize that some sawmills saw only the larger logs of certain grades; so some sawmills experience above-average lumber-recovery values. Sawmill managers can determine their correct lumber-recovery values by calculating weighted averages of the lumber-grade yield figures found in Report D1737 for the log diameters they use.

LUMBER-RECOVERY VALUE CHANGES

The trends in hardwood lumber-recovery values, based on Appalachian species and log grades, indicate that very little increase in sawlog product value occurred during the period 1955-64. The trends of lumber-recovery values in dollars per thousand board feet for log-grades 1, 2, and 3 of the major Appalachian species are shown in figures 1 to 11.

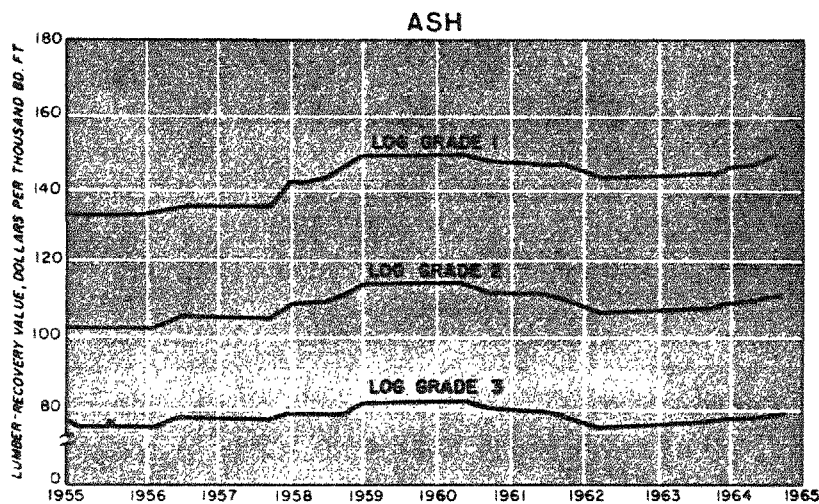


Figure 1.—Trends in lumber-recovery values for ash sawlogs in the Appalachian region, by log grades, 1955-64.

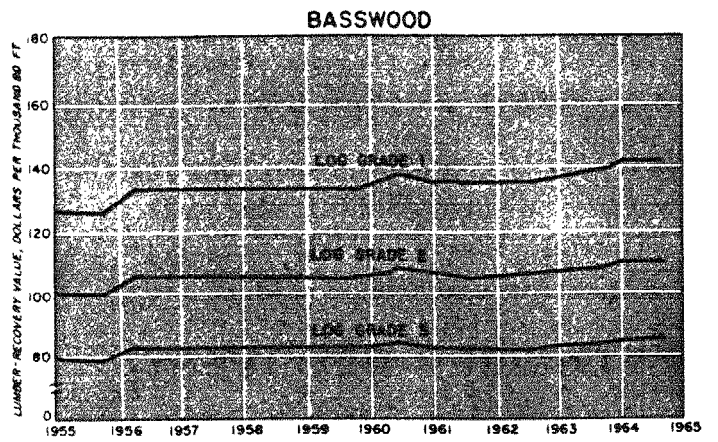


Figure 2.—Trends in lumber-recovery values for basswood sawlogs in the Appalachian region, by log grades, 1955-64.

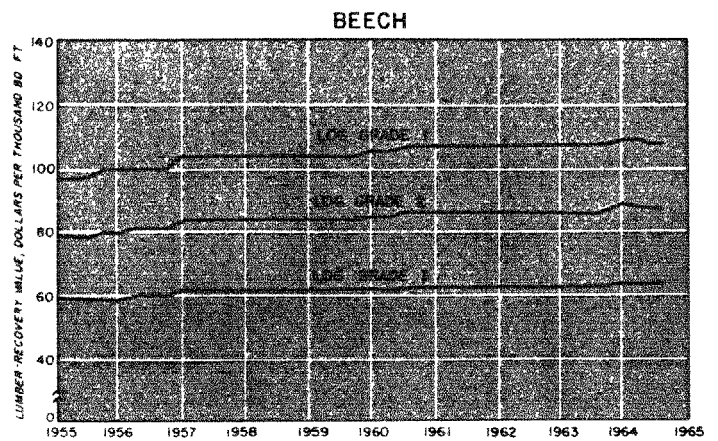


Figure 3.—Trends in lumber-recovery values for beech sawlogs in the Appalachian region, by log grades, 1955-64.

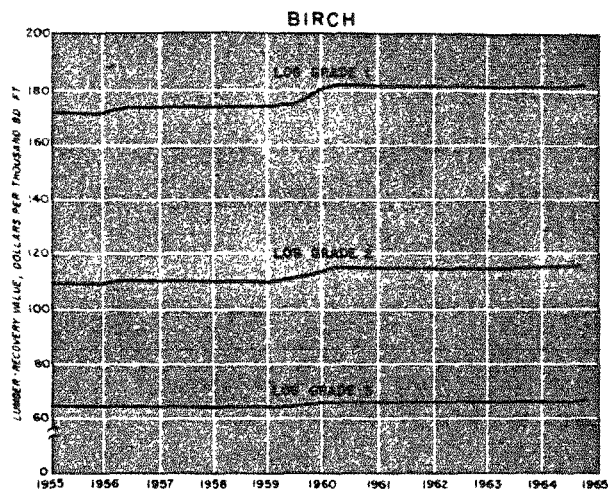


Figure 4.—Trends in lumber-recovery values for birch sawlogs in the Appalachian region, by log grades, 1955-64.

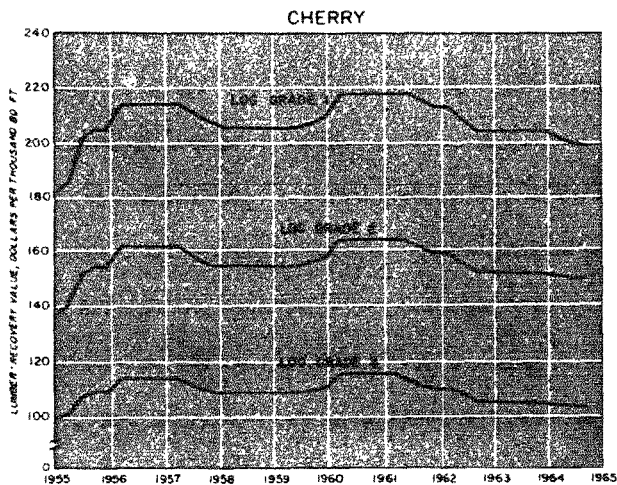


Figure 5.—Trends in lumber-recovery values for cherry sawlogs in the Appalachian region, by log grades, 1955-64.

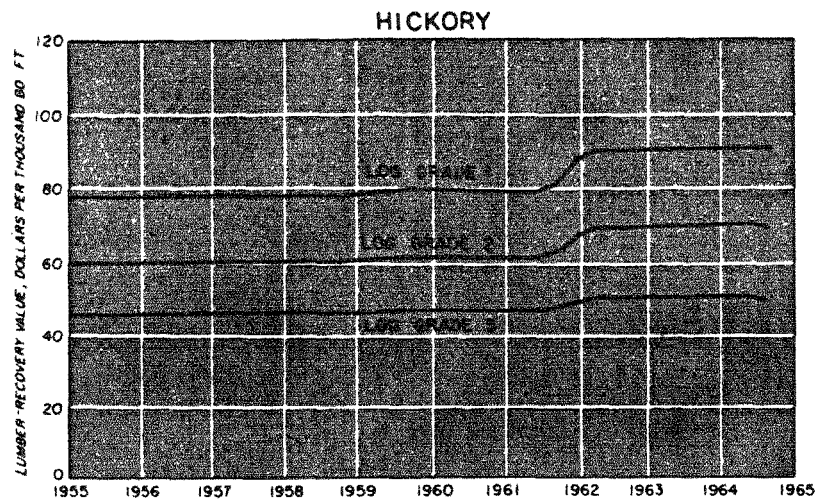


Figure 6.—Trends in lumber-recovery values for hickory sawlogs in the Appalachian region, by log grades, 1955-64.

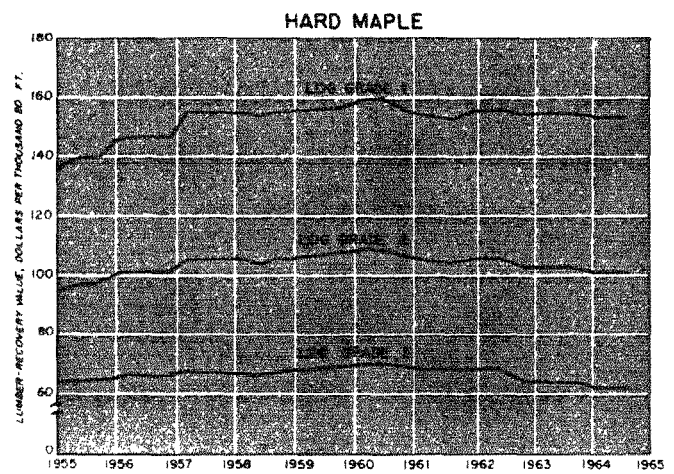


Figure 7.—Trends in lumber-recovery values for hard maple sawlogs in the Appalachian region, by log grades, 1955-64.

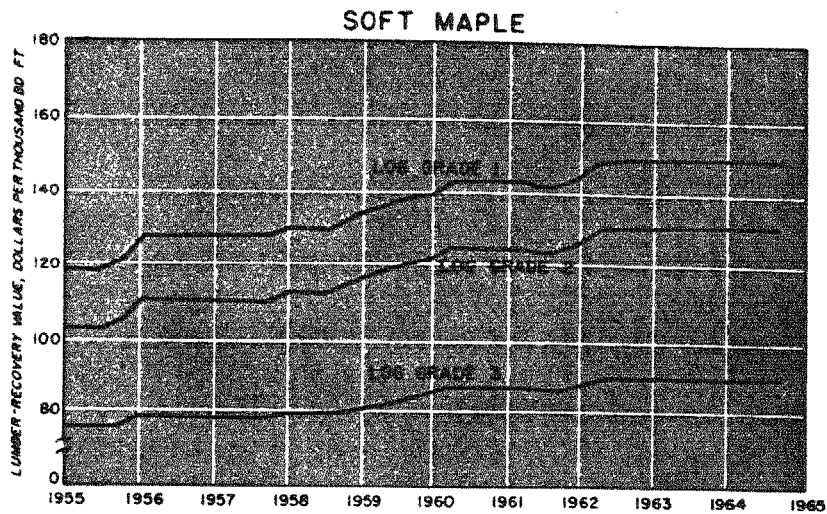


Figure 8.—Trends in lumber-recovery values for soft maple sawlogs in the Appalachian region, by log grades, 1955-64.

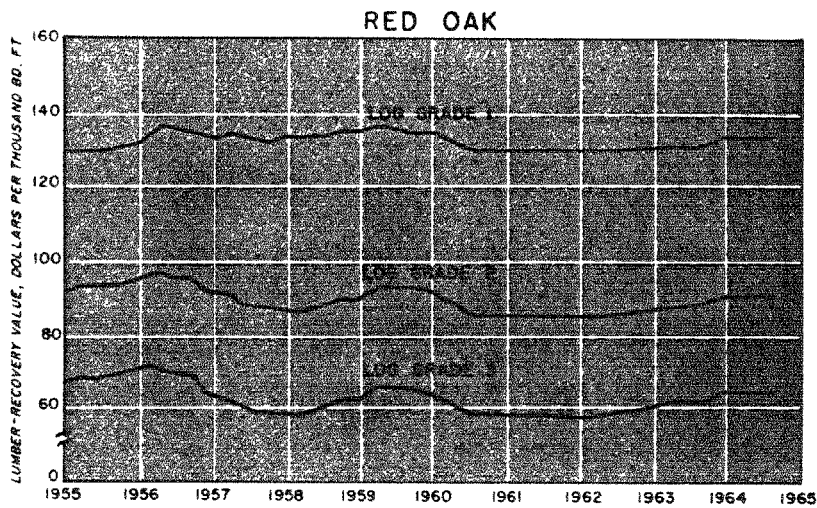


Figure 9.—Trends in lumber-recovery values for red oak sawlogs in the Appalachian region, by log grades, 1955-64.

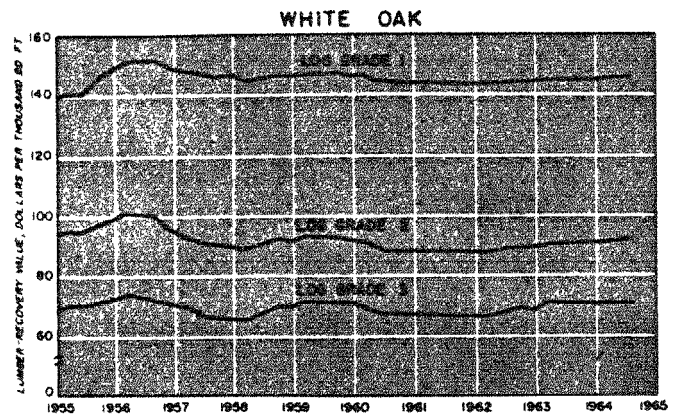


Figure 10.—Trends in lumber-recovery values for white oak sawlogs in the Appalachian region, by log grades, 1955-64.

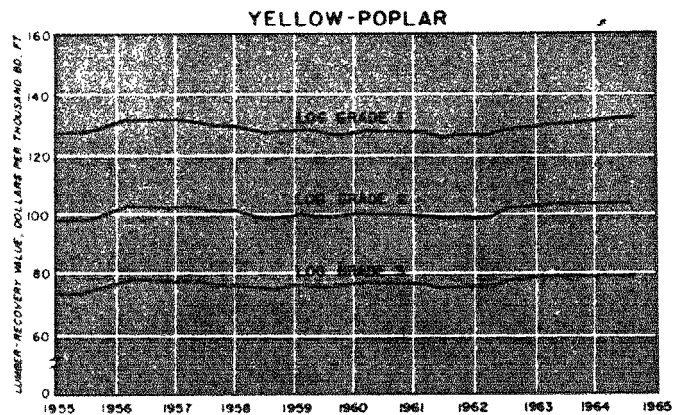


Figure 11.—Trends in lumber-recovery values for yellow-poplar sawlogs in the Appalachian region, by log grades, 1955-64.

Relatively little fluctuation occurred in the lumber-recovery values of most log grades and species. Only one species, soft maple, showed a lumber-recovery value increase of as much as 2 percent per year. Five other species—ash, basswood, beech, hickory, and hard maple—increased in

lumber-recovery value between 1 and 2 percent per year for one or more log grades. All other species studied showed increases of less than 1 percent per year, and decreases were recorded for some log grades in three of the more prevalent species—hard maple, red oak, and white oak.

As an example of what these small increases in value can mean, the estimate of combined increase in recovery value between 1955 and 1964 for the three most predominant West Virginia Appalachian lumber species groups—red oak, white oak, and yellow-poplar—amounted to only 1.56 percent or \$1.95 per thousand board feet. (The methods used to compute these values are shown in tables 4 and 5, in the Appendix.) These three lumber species groups represented almost 70 percent of the hardwood timber volume harvested in 1960.⁴ This means that in West Virginia approximately seven-tenths of the total volume of hardwood lumber manufactured showed an average value increase of less than 20 cents per thousand board feet per year over the last 10 years.

The average lumber-recovery values for 11 principal Appalachian hardwood species by log grades for 1955 and 1964 are shown in table 2. This table also shows the percentage of changes in lumber-recovery values between 1955 and 1964, based on the 1955 values, for 11 species, by log grade.

The range in lumber-recovery values for grade 1 logs in 1964 varied from \$90.37 for hickory to \$201.18 for cherry per thousand board feet. The predominant Appalachian species, red oak, white oak, and yellow-poplar, had lumber-recovery values of \$135.00, \$145.72, and \$132.77 per thousand board feet, respectively. These values were the third, fourth, and fifth lowest lumber-recovery values of all species evaluated.

Six of the 11 species studied had lumber-recovery values for 1964 below \$67 per thousand board feet for grade 3 logs. Of these six, red oak and white oak had lumber-recovery values of \$64.68 and \$65.63 per thousand board feet, respec-

⁴ Ferguson, Roland H. THE TIMBER RESOURCES OF WEST VIRGINIA. U.S. Forest Serv. NE. Forest Exp. Sta., Resource Bull. NE-2, 121 pp., illus. 1964.

Table 2.—Average lumber-recovery values based on log grades for the different hardwood species and log grades in the Appalachian Region during 1955 and 1964, and the percentage of change between these years
(In dollars per thousand board feet)

Species groups	1955 Lumber-recovery value			1964 Lumber-recovery value			Percent change in recovery value between 1955 and 1964		
	Log grade 1	Log grade 2	Log grade 3	Log grade 1	Log grade 2	Log grade 3	Log grade 1	Log grade 2	Log grade 3
Ash	\$132.59	\$101.80	\$ 75.08	\$147.97	\$110.70	\$ 78.60	+11.60	+ 8.74	+ 4.69
Basswood	125.66	99.66	79.56	142.31	110.35	85.39	+13.25	+10.73	+ 7.34
Beech	97.56	79.23	58.79	107.82	87.01	62.98	+10.52	+ 9.82	+ 7.13
Birch	171.41	109.79	64.37	181.59	115.86	66.42	+ 5.94	+ 5.53	+ 3.18
Cherry	192.50	145.08	103.41	201.18	149.80	103.54	+ 4.51	+ 3.25	+ .13
Hickory	77.52	59.41	45.58	90.37	68.89	49.00	+16.58	+15.96	+ 7.50
Hard maple	137.98	95.98	64.11	153.75	101.33	62.30	+11.43	+ 5.57	+ 2.82
Soft maple	118.72	103.00	75.48	148.86	130.39	88.83	+25.39	+26.59	+17.69
Red oak	129.74	92.67	67.88	135.00	92.12	64.68	+ 4.05	- .59	- 4.71
White oak	141.33	95.21	70.08	145.72	91.53	65.63	+ 3.11	- 3.87	- 6.35
Yellow-poplar	127.66	98.36	74.50	132.77	104.94	80.42	+ 4.00	+ 6.69	+ 7.95

tively. These values represent decreases of 4.71 and 6.35 percent respectively, from the 1955 values.

Could these composite changes in product values have been predicted if only the trends in lumber prices had been known?

LUMBER PRICE TRENDS

The trends in lumber prices certainly reflect to some degree what is happening to the value of lumber in a log because the lumber-recovery value is determined from these prices.

No. 1 Common-and-Better lumber prices for ash, basswood, beech, and hard maple increased approximately 10 percent. Soft maple prices increased over 20 percent for No. 1 Common-and-Better. Birch, cherry, hickory, red oak, and white oak prices increased about 5 to 10 percent for No. 1 Common-and-Better; and No. 1 Common hickory prices went up 36 percent; No. 1 Common red oak prices remained the same; and No. 1 Common white oak prices decreased 7.5 percent. Yellow-poplar Saps-and-Better prices showed no change, but the No. 1 Common price rose about 5 percent.

From these price trends for No. 1 Common-and-Better lumber, one might expect substantial increases in lumber-recovery values. And, in general, substantial increases did occur in grade 1 logs of the different species.

Prices of the lower grades of lumber increased very little between 1955 and 1964. Most species registered either a lack of change or a substantial decrease. For example, prices of No. 2 Common lumber of cherry, hickory, hard maple, red oak, and white oak decreased 3 to 9 percent and price of No. 2 Common ash did not change. The price of No. 3A Common lumber declined from 7 to 11 percent for three of the major species—hard maple, red oak, and white oak. From the amount of price decline associated with the lower lumber grades, it would be assumed that the product values for grade 3 logs would also be low; and this was generally found to be so.

Analyses of the different lumber-grade price curves (figs. 12 to 22) indicate the change, or lack of change, that occurs

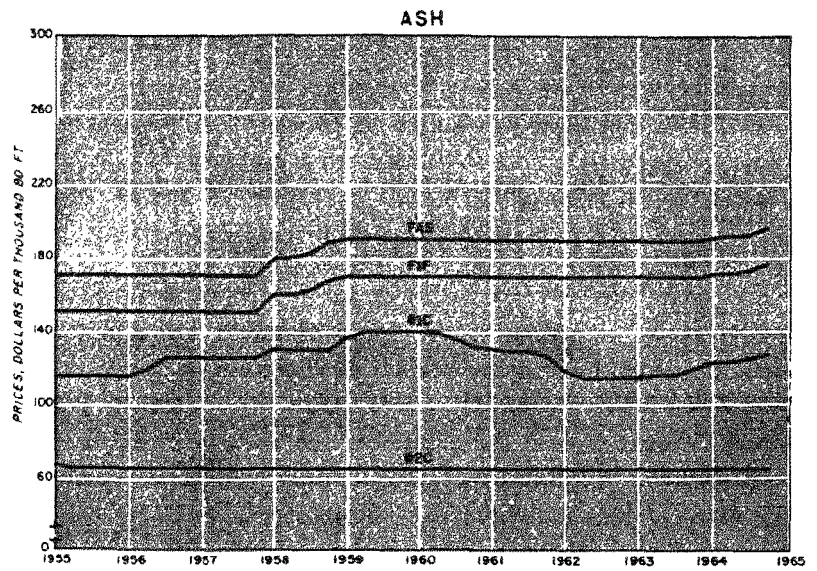


Figure 12.—Trends in prices for 4/4 ash lumber in the Appalachian region, by lumber grades, 1955-64.

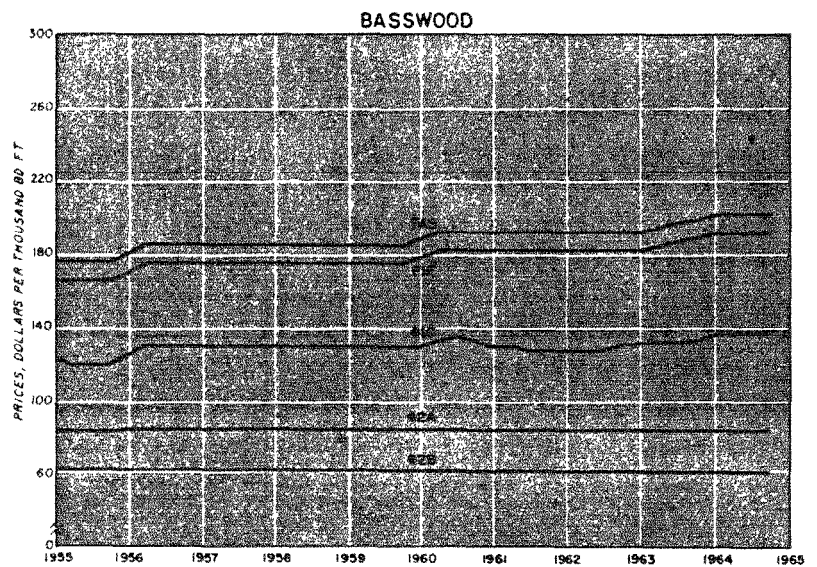


Figure 13.—Trends in prices for 4/4 basswood lumber in the Appalachian region, by lumber grades, 1955-64.

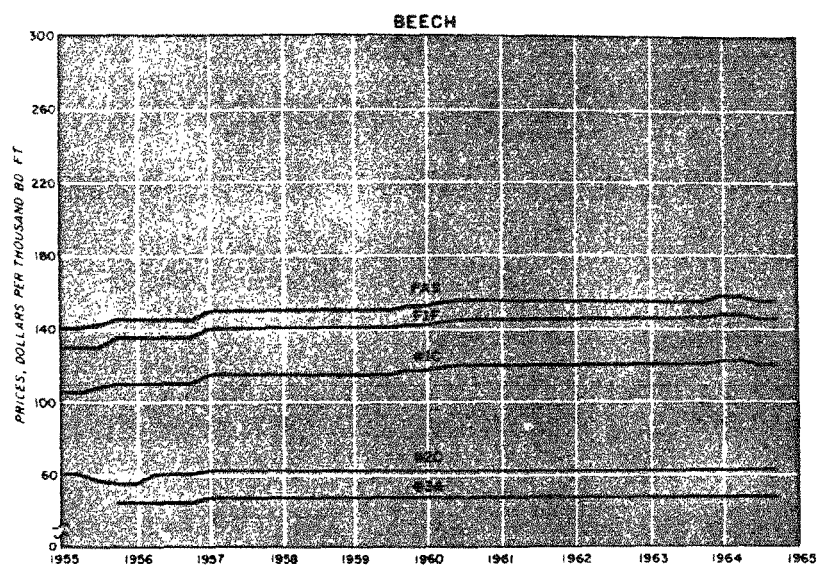


Figure 14.—Trends in prices for 4/4 beech lumber in the Appalachian region, by lumber grades, 1955-64.

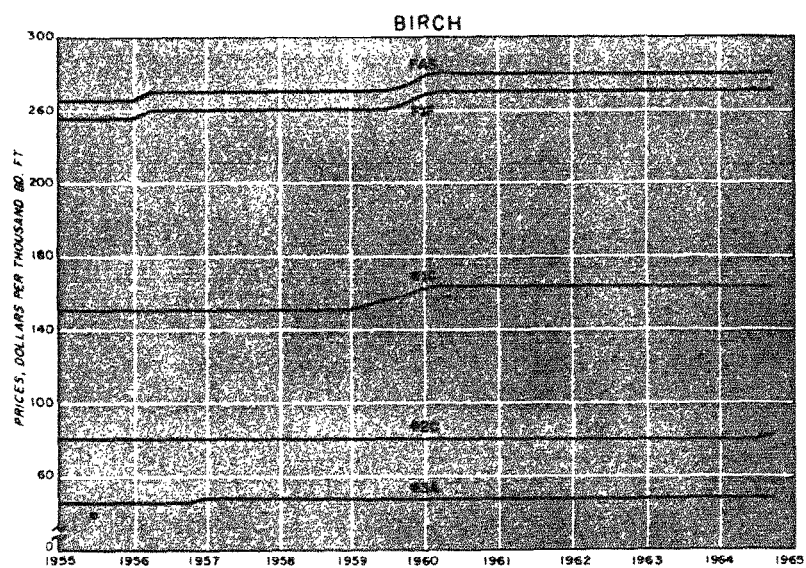


Figure 15.—Trends in prices for 4/4 birch lumber in the Appalachian region, by lumber grades, 1955-64.

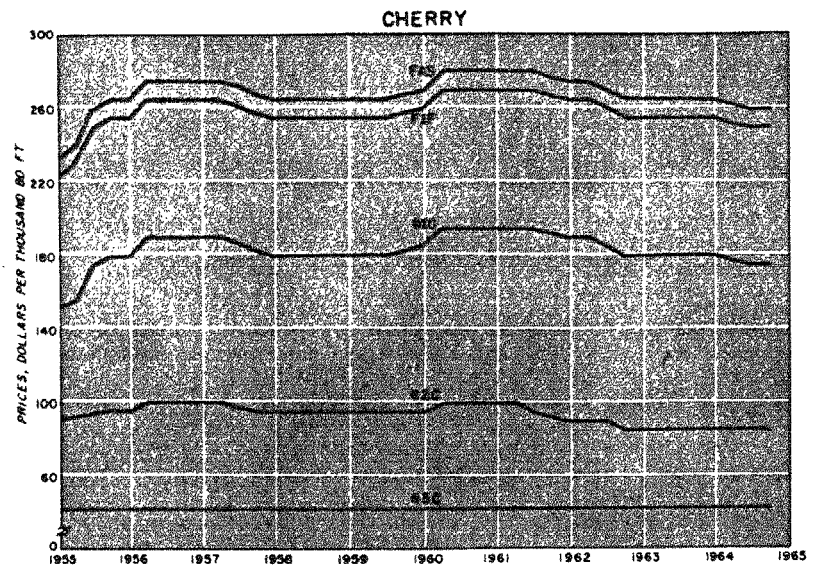


Figure 16.—Trends in prices for 4/4 cherry lumber in the Appalachian region, by lumber grades, 1955-64.

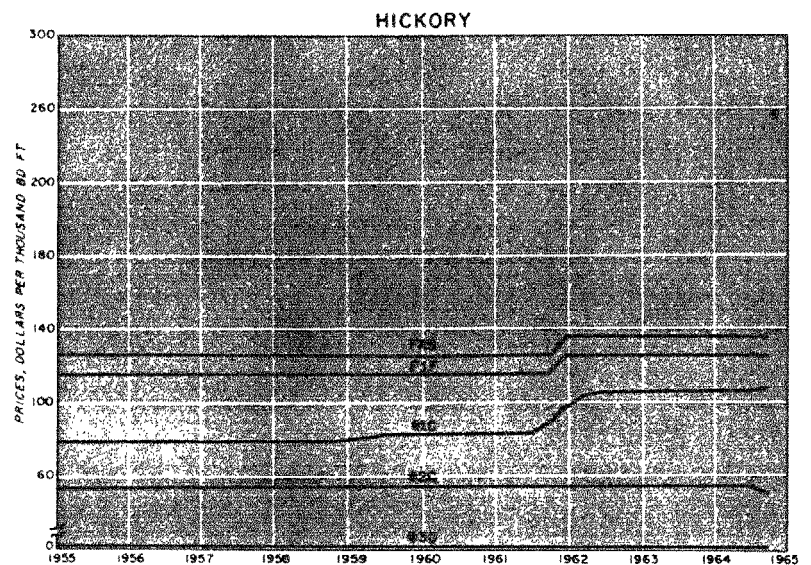


Figure 17.—Trends in prices for 4/4 hickory lumber in the Appalachian region, by lumber grades, 1955-64.

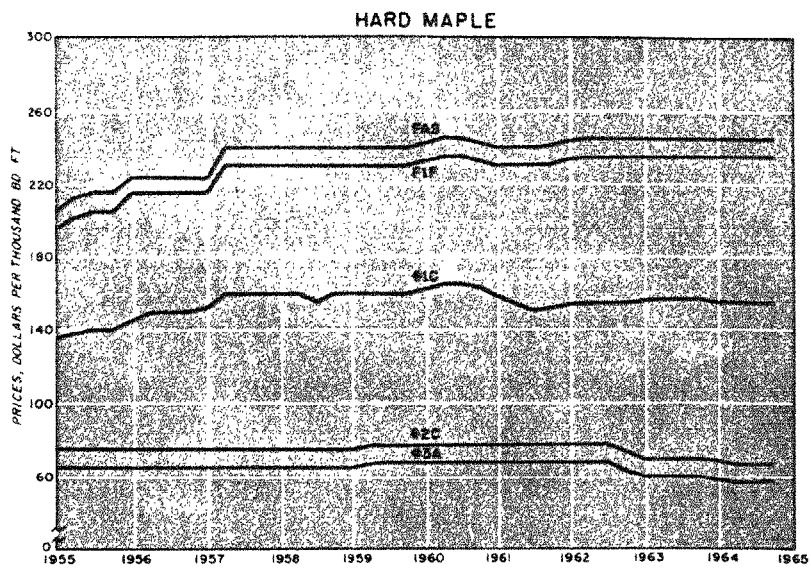


Figure 18.—Trends in prices for 4/4 hard maple lumber in the Appalachian region, by lumber grades, 1955-64.

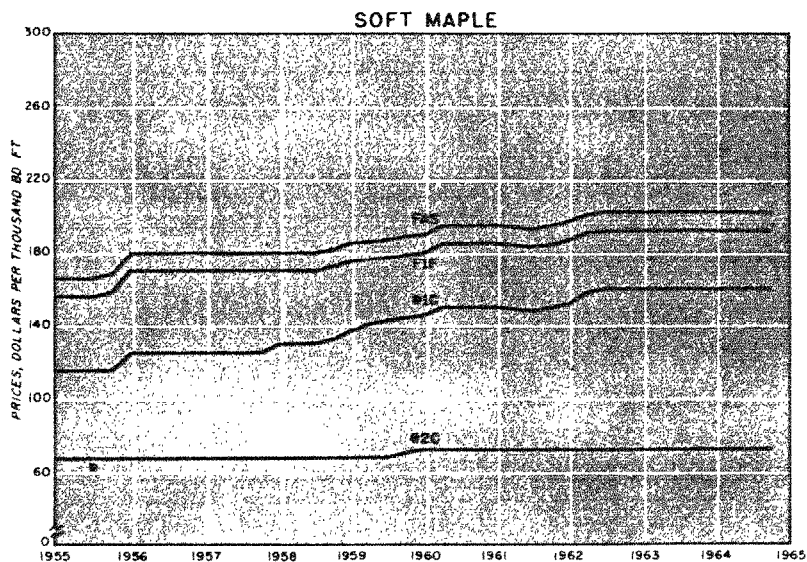


Figure 19.—Trends in prices for 4/4 soft maple lumber in the Appalachian region, by lumber grades, 1955-64.

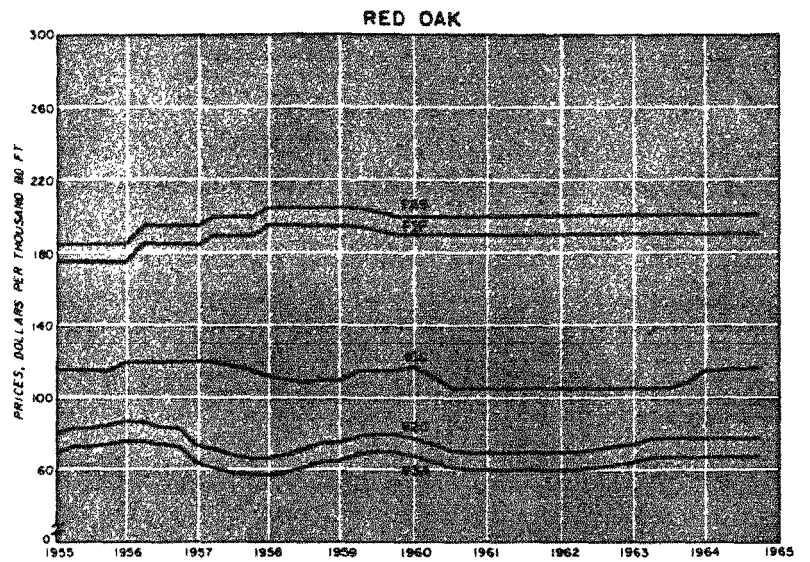


Figure 20.—Trends in prices for 4/4 red oak lumber in the Appalachian region, by lumber grades, 1955-64.

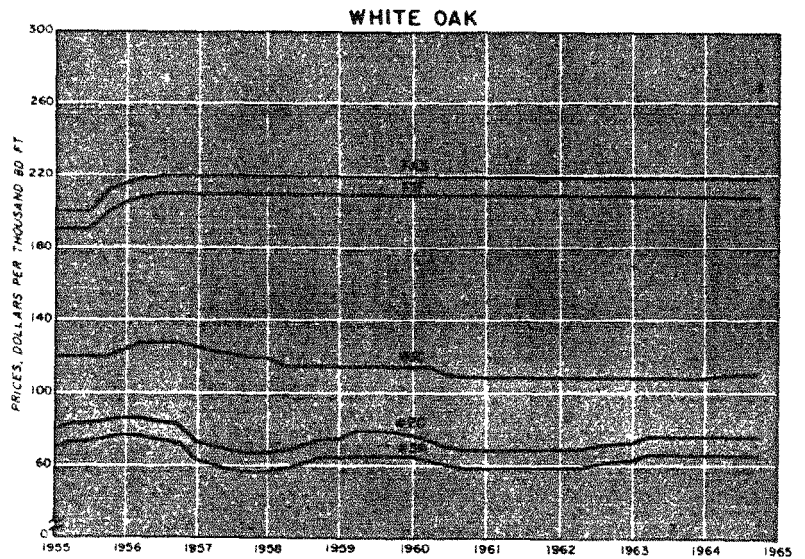


Figure 21.—Trends in prices for 4/4 white oak lumber in the Appalachian region, by lumber grades, 1955-64.

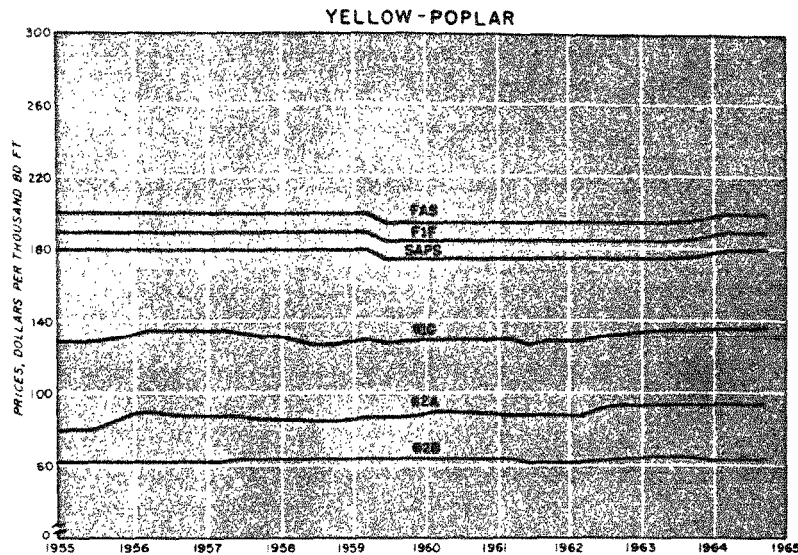


Figure 22.—Trends in prices for 4/4 yellow-poplar lumber in the Appalachian region, by lumber grades, 1955-64.

in one grade with respect to other grades in the same species or similar species. An example is the change in price of No. 1 Common ash and hickory with respect to the prices of the other lumber grades for these species (figs. 12 and 17).

Average quarterly lumber-grade prices based on first-week-of-the-month price quotations in the *Hardwood Market Report* for each species are presented in the Appendix, tables 6 to 16. These represent the actual prices used to plot the lumber price-trend curves in figures 12 to 22.

The average 1955 and 1964 lumber prices for the different Appalachian hardwood species by grades are presented in table 3. The percentage of change in lumber-grade prices between 1955 and 1964 is also shown. The figures in this table represent quantitative values as to the price changes that occurred between the end years of the decade studied.

Table 3.—Average quoted prices for different hardwood species and grades of lumber in the Appalachian Region during 1955 and 1964, and the percentage of change between these years.

(In dollars per thousand board feet)

Species groups	Lumber grades	Average 1955 price	Average 1964 price	Percent change
Ash	FAS	\$170	\$193	+13.5
	F1F	160	183	+14.4
	# -1C	115	125	+ 8.7
	# -2C	65	65	0
Birch	FAS	265	280	+ 5.7
	F1F	255	270	+ 5.9
	# -1C	150	163	+ 8.7
	# -2C	80	81	+ 1.2
Hard maple	FAS	212	245	+15.6
	F1F	202	235	+16.3
	# -1C	138	155	+12.3
	# -2C	75	68	- 9.3
	# -3A	65	58	-10.8
White oak-plain	FAS	203	220	+ 8.4
	F1F	192	210	+ 9.4
	# -1C	120	111	- 7.5
	# -2C	83	77	- 7.2
	# -3A	73	67	- 8.2
Basswood	FAS	175	202	+15.4
	F1F	165	192	+16.4
	# -1C	120	137	+14.2
	# -2A	83	85	+ 2.4
	# -2B	62	62	0
Cherry	FAS	250	262	+ 4.8
	F1F	240	253	+ 5.0
	# -1C	166	177	+ 6.6
	# -2C	93	85	- 8.7
	# -3C	42	42	0

Continued

Table 3, Continued.

Species groups	Lumber grades	Average 1955 price	Average 1964 price	Percent change
Soft maple	FAS	166	202	+21.7
	F1F	156	192	+23.1
	# -1C	116	160	+37.9
	# -2C	67	72	+ 7.5
Yellow-poplar	FAS	200	200	0
	F1F	190	190	0
	Saps	180	180	0
	# -1C	129	136	+ 5.4
	# -2A	81	94	+16.0
	# -2B	62	64	+ 3.2
Beech	FAS	142	156	+ 9.9
	F1F	131	146	+11.4
	# -1C	107	121	+13.1
	# -2C	58	62	+ 6.9
	# -3A	45	47	+ 4.4
Hickory	FAS	125	136	+ 8.8
	F1F	115	126	+ 9.6
	# -1C	78	106	+35.9
	# -2C	53	51	- 3.8
Red oak-plain	FAS	185	200	+ 8.1
	F1F	175	190	+ 9.6
	# -1C	115	115	0
	# -2C	83	77	- 7.2
	# -3A	73	67	- 8.2

LUMBER PRICES VS. LUMBER-RECOVERY VALUES

Trends in lumber prices do provide an indication of the corresponding trends in lumber-recovery values, but it is only an indication of the direction of the change and not of the magnitude unless the change is unusually large. As noted previously, a single grade of lumber represents only a proportion of the lumber sawed from any sawlog, and this proportion increases or decreases with the quality or grade of the log. Consequently price changes for one or a few lumber grades cannot possibly provide a complete picture of how the value of all the lumber in a log has been affected.

Logically, price changes in the upper grades of lumber affect log-grade 1 much more than they do log-grade 3 because these upper lumber grades represent a greater portion of grade 1 logs. For example, First-and-Seconds and Selects in upland white oak represent about 46 percent of an average grade 1 log and less than 2 percent of an average grade 3 log. Therefore, a \$10 rise in the price of First-and-Seconds and Selects would increase the product value of grade 1 logs by \$4.60 and that of grade 3 by only 20 cents per thousand board feet, or 23 times as much for grade 1 as for grade 3 logs.

The reverse is also true to some extent. Changes in the prices for the lower grades of lumber have a greater effect on recovery value of log grade 3 than they do on log grade 1. However, the effect is smaller because of the smaller difference between the proportions of these lumber grades represented in the two grades of logs.

CONCLUSIONS

In general, the fluctuations in prices for hardwood lumber in the Appalachian Region have resulted in only a slight increase in the overall market value of hardwood lumber produced during the past decade.

Although some species and log grades within species had a substantial increase in lumber-recovery value, the proportion of the total volume harvested that these represent is

small. The majority of the lumber grades that increased in price were the higher grades; consequently, this caused the largest increase in lumber-recovery value to be associated with logs of grade 1 quality. In some cases, specifically in the oaks, log-grade 1 was the only log grade within the species that showed an increase in lumber-recovery value between 1955 and 1964. Oak of log grades 2 and 3 decreased in product value. These oak species groups represented approximately one-half the total volume of hardwoods harvested in the Region.

Yet during this same period, lumber-production costs continued to spiral upward. The cost of sawmill equipment alone increased almost 50 percent between 1955 and 1964.⁵ Although many Appalachian hardwood sawmills increased their operational efficiency through automation and other improvements, the profit margins remained critical.

Because of the low profit margins in the sawmill industry today, the sawmill owner must keep a watchful eye on his gross income and the costs of operation. This means not only watching individual lumber prices, but also determining the effect that changes in lumber prices have on lumber-recovery values for particular species. Just as the price of an individual lumber grade will not provide the entire picture on the recovery value for a species, neither will the lumber-recovery value of an individual species give the complete picture of gross income. Both must be weighted according to the proportion of the whole that they represent. This is why large increases in prices for one or two lumber grades of a minor species, such as hackberry, have a negligible effect on gross income.

Lumber-recovery values are important because they can provide more than just information on gross income. They can also be used in predicting sawmill profits, in determining economic sawlog and stumpage purchase prices, and in evaluating sawmill conversion practices.⁶

⁵ Sarles, R.L. TEN-YEAR CHANGES IN SELECTED LOGGING AND SAWMILLING COSTS. *Lumberman* 210 (2620): 28-30. 1965.

⁶ Martens, D.G. LOG GRADES—A KEY TO PREDICTING SAWMILL PROFITS. *Lumberman* 210 (2612): 29-34. 1965.

Although many sawmills could be classified as non-profit-making organizations, they were not meant to be that way: most of them are in business to make money. And surely the most efficient and effective management would require a good knowledge of all the factors that affect the overall market value and gross income derived from the major product—hardwood lumber.

■

A P P E N D I X

Table 4.—Computation of composite percent change in red oak, white oak, and yellow-poplar log-recovery values in West Virginia between 1955 and 1964

Species	Log grade	Species in log grade ¹	Change by log grade ²	Change in recovery value by species ³	Species total volume cut ⁴	Change in recovery value
				Percent	Weighted percent	
Red oak	1	46.5	4.05	--	--	--
	2	38.1	- .59	--	--	--
	3	13.5	-4.71	--	--	--
Total		--	--	1.02	36.4	0.37
White oak	1	60.1	3.11	--	--	--
	2	23.1	-3.87	--	--	--
	3	15.7	-6.35	--	--	--
Total		--	--	0.02	12.1	-0.002
Yellow poplar	1	30.0	4.00	--	--	--
	2	47.9	6.69	--	--	--
	3	21.7	7.95	--	--	--
Total		--	--	6.13	19.4	1.19
Composite percentage change in recovery value			--	--	--	1.56

¹ Average found for mill-run sawlogs in several sawmills in West Virginia.

² Values taken from table 2.

³ Product of percent of species in log grade times percent change by log grade and summed.

⁴ Ferguson, *op. cit.*, p. 52. Values calculated from table 23, assuming red oaks to represent 75 percent of select and other red and white oaks cut.

Table 5.—Computation of composite change in monetary value of red oak, white oak, and yellow-poplar log recovery values in West Virginia 1955 and 1964

Species	Log grade	Value change ¹	Log grade as percent of species ²	Change in value for species ³	Species as percent of total cut ⁴	Weighted monetary change in recovery value
		<i>Thousand board feet</i>	<i>Percent</i>	<i>Thousand board feet</i>	<i>Percent</i>	
Red oak	1	5.26	46.5	--	--	--
	2	- .55	38.1	--	--	--
	3	-3.20	13.5	--	--	--
Total				1.80	36.4	\$0.66
White oak	1	4.39	60.1	--	--	--
	2	-3.68	23.1	--	--	--
	3	-4.45	15.7	--	--	--
Total				1.09	12.1	0.13
Yellow-poplar	1	5.11	30.0	--	--	--
	2	6.58	47.9	--	--	--
	3	5.92	21.7	--	--	--
Total				5.97	19.4	1.16
Total composite change in recovery value				--	--	\$1.95

¹ Values taken as differences between 1955 and 1964 log-recovery values appearing in table 2

² Average found for mill-run sawlogs in several sawmills in West Virginia.

³ Product of value change times log grade as percent of species and summed.

⁴ Ferguson, *op. cit.*, p. 52. Values calculated from table 23, assuming red oaks to represent 75 percent of select and other red and white oaks cut

Table 6.—Average quarterly prices for 4/4 Appalachian ash,
by lumber grades, 1955-64

Lumber grades	Quarter	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
First and Seconds	1	\$170	\$170	\$170	\$180	\$190	\$190	\$190	\$190	\$190	\$191
	2	170	170	170	180	190	190	190	190	190	192
	3	170	170	170	182	190	190	190	190	190	193
	4	170	170	170	188	190	190	190	190	190	197
First Face	1	160	160	160	170	180	180	180	180	180	181
	2	160	160	160	170	180	180	180	180	180	182
	3	160	160	160	172	180	180	180	180	180	183
	4	160	160	160	178	180	180	180	180	180	187
No. 1 Common	1	115	115	125	130	137	140	131 ^a	119	115	124
	2	115	118	125	130	140	140	130	115	117	124
	3	115	125	125	130	140	137	130	115	117	125
	4	115	125	125	130	140	132	127	115	120	127
No. 2 Common	1	65	65	65	65	65	65	65	65	65	65
	2	65	65	65	65	65	65	65	65	65	65
	3	65	65	65	65	65	65	65	65	65	65
	4	65	65	65	65	65	65	65	65	65	65

^a Computed from first week of the month publications of the *Hardwood Market Report*, *Appalachian Section*. Quoted prices represent estimates of current FOB Appalachian mill point average market prices on sales to consuming trade on band sawed Appalachian hardwoods in carload quantities, random widths and lengths, rough, air dried and grade in accordance with National Hardwood Lumber Association rules of inspection.

Table 7.—Average quarterly prices for 4/4 Appalachian basswood,
by lumber grades, 1955-64

Lumber grades	Quarter	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
First and Seconds	1	\$175	\$180	\$185	\$185	\$185	\$188	\$192	\$192	\$192	\$202
	2	175	185	185	185	185	192	192	192	195	202
	3	175	185	185	185	185	192	192	192	197	202
	4	175	185	185	185	185	192	192	192	199	202
First 1 Face	1	165	170	175	175	175	178	182	182	182	192
	2	165	175	175	175	175	182	182	182	185	192
	3	165	175	175	175	175	182	182	182	187	192
	4	165	175	175	175	175	182	182	182	189	192
No. 1 Common	1	122	125	130	130	130	130	130	128	132	137
	2	120	130	130	130	130	133	130	128	132	137
	3	120	130	130	130	130	135	128	128	132	137
	4	120	130	130	130	130	133	128	131	133	137
No. 2A Common	1	83	84	85	85	85	85	85	85	85	85
	2	83	85	85	85	85	85	85	85	85	85
	3	83	85	85	85	85	85	85	85	85	85
	4	83	85	85	85	85	85	85	85	85	86
No. 2B Common	1	62	62	62	62	62	62	62	62	62	62
	2	62	62	62	62	62	62	62	62	62	62
	3	62	62	62	62	62	62	62	62	62	62
	4	62	62	62	62	62	62	62	62	62	62

Table 8.—Average quarterly prices for 4/4 Appalachian beech,
by lumber grades, 1955-64

Lumber grades	Quarter	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
First-and-Seconds	1	\$140	\$145	\$150	\$150	\$150	\$152	\$155	\$155	\$155	\$157
	2	140	145	150	150	150	154	155	155	155	157
	3	142	145	150	150	150	155	155	155	155	155
	4	145	145	150	150	152	155	155	155	155	155
First 1 Face	1	130	135	140	140	140	142	145	145	145	147
	2	130	135	140	140	140	144	145	145	145	147
	3	130	135	140	140	140	145	145	145	145	145
	4	135	135	140	140	142	145	145	145	145	145
No. 1 Common	1	105	110	115	115	115	117	120	120	120	122
	2	105	110	115	115	115	119	120	120	120	122
	3	107	110	115	115	115	120	120	120	120	120
	4	110	110	115	115	117	120	120	120	120	120
No. 2 Common	1	60	55	62	62	62	62	62	62	62	62
	2	60	60	62	62	62	62	62	62	62	62
	3	57	60	62	62	62	62	62	62	62	62
	4	55	60	62	62	62	62	62	62	62	62
No. 3A Common	1	--	45	47	47	47	47	47	47	47	47
	2	--	45	47	47	47	47	47	47	47	47
	3	--	45	47	47	47	47	47	47	47	47
	4	45	45	47	47	47	47	47	47	47	47

Table 9.—Average quarterly prices for 4/4 Appalachian birch,
by lumber grades, 1955-64

Lumber grades	Quarter	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
First-and-Seconds	1	\$265	\$265	\$270	\$270	\$270	\$278	\$280	\$280	\$280	\$280
	2	265	270	270	270	270	280	280	280	280	280
	3	265	270	270	270	270	280	280	280	280	280
	4	265	270	270	270	273	280	280	280	280	280
First 1 Face	1	255	255	260	260	260	268	270	270	270	270
	2	255	260	260	260	260	270	270	270	270	270
	3	255	260	260	260	260	270	270	270	270	270
	4	255	260	260	260	263	270	270	270	270	270
No. 1 Common	1	150	150	150	150	150	162	163	163	163	163
	2	150	150	150	150	153	163	163	163	163	163
	3	150	150	150	150	155	163	163	163	163	163
	4	150	150	150	150	158	163	163	163	163	163
No. 2 Common	1	80	80	80	80	80	80	80	80	80	80
	2	80	80	80	80	80	80	80	80	80	80
	3	80	80	80	80	80	80	80	80	80	80
	4	80	80	80	80	80	80	80	80	80	83
No. 3A Common	1	45	45	47	47	47	47	47	47	47	47
	2	45	45	47	47	47	47	47	47	47	47
	3	45	45	47	47	47	47	47	47	47	47
	4	45	45	47	47	47	47	47	47	47	47

Table 10.—Average quarterly prices for 4/4 Appalachian cherry,
by lumber grades, 1955-64

Lumber grades	Quarter	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
First-and-Seconds	1	\$233	\$265	\$275	\$265	\$265	\$270	\$280	\$275	\$265	\$265
	2	240	275	275	265	265	280	280	275	265	262
	3	260	275	272	265	265	280	280	270	265	260
	4	265	275	267	265	267	280	277	265	265	260
First 1 Face	1	223	255	265	255	255	260	270	265	255	255
	2	230	265	265	255	255	270	270	265	255	252
	3	250	265	262	255	255	270	270	260	255	250
	4	255	265	257	255	257	270	267	255	255	250
No. 1 Common	1	152	180	190	180	180	185	195	190	180	180
	2	155	190	190	180	180	195	195	190	180	177
	3	175	190	187	180	180	195	195	185	180	175
	4	180	190	182	180	182	195	192	180	180	175
No. 2 Common	1	91	95	100	95	95	95	100	90	85	85
	2	92	100	100	95	95	100	100	90	85	85
	3	94	100	97	95	95	100	95	90	85	85*
	4	95	100	95	95	95	100	92	85	85	85
No. 3 Common	1	42	42	42	42	42	42	42	42	42	42
	2	42	42	42	42	42	42	42	42	42	42
	3	42	42	42	42	42	42	42	42	42	42
	4	42	42	42	42	42	42	42	42	42	42

Table 11.—Average quarterly prices for 4/4 Appalachian hickory,
by lumber grades, 1955-64

Lumber grades	Quarter	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
First-and-Seconds	1	\$125	\$125	\$125	\$125	\$125	\$125	\$125	\$135	\$135	\$135
	2	125	125	125	125	125	125	125	135	135	135
	3	125	125	125	125	125	125	125	135	135	135
	4	125	125	125	125	125	125	125	135	135	137
First 1 Face	1	115	115	115	115	115	115	115	125	125	125
	2	115	115	115	115	115	115	115	125	125	125
	3	115	115	115	115	115	115	115	125	125	125
	4	115	115	115	115	115	115	115	125	125	127
No. 1 Common	1	78	78	78	78	79	82	82	98	105	105
	2	78	78	78	78	80	82	82	104	105	105
	3	78	78	78	78	82	82	82	105	105	105
	4	78	78	78	78	82	82	88	105	105	107
No. 2 Common	1	53	53	53	53	53	53	53	53	53	53
	2	53	53	53	53	53	53	53	53	53	53
	3	53	53	53	53	53	53	53	53	53	53
	4	53	53	53	53	53	53	53	53	53	50
No. 3 Common	1	21	21	21	21	21	21	21	21	21	21
	2	21	21	21	21	21	21	21	21	21	21
	3	21	21	21	21	21	21	21	21	21	21
	4	21	21	21	21	21	21	21	21	21	21

Table 12.—Average quarterly prices for 4/4 Appalachian hard maple,
by lumber grades, 1955-64

Lumber grades	Quarter	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
First and Seconds	1	\$205	\$225	\$225	\$240	\$240	\$242	\$240	\$244	\$245	\$245
	2	212	225	240	240	240	245	240	245	245	245
	3	215	225	240	240	240	245	240	245	245	245
	4	215	225	240	240	240	243	241	245	245	245
First 1 Face	1	195	215	215	230	230	232	230	234	235	235
	2	202	215	230	230	230	235	230	235	235	235
	3	205	215	230	230	230	235	230	235	235	235
	4	205	215	230	230	230	233	231	235	235	235
No. 1 Common	1	135	145	152	160	160	162	157	154	156	155
	2	138	150	160	160	160	165	155	155	157	155
	3	140	150	160	160	160	165	150	155	157	155
	4	140	150	160	160	160	163	151	155	157	155
No. 2 Common	1	75	75	75	75	75	78	78	78	70	69
	2	75	75	75	75	77	78	78	78	70	67
	3	75	75	75	75	78	78	78	78	70	67
	4	75	75	75	75	78	78	78	73	70	67
No. 3A Common	1	65	65	65	65	65	68	68	68	60	59
	2	65	65	65	65	67	68	68	68	60	57
	3	65	65	65	65	68	68	68	68	60	57
	4	65	65	65	65	68	68	68	63	60	57

Table 13.—Average quarterly prices for 4/4 Appalachian soft maple,
by lumber grades, 1955-64

Lumber grades	Quarter	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
		\$165	\$180	\$180	\$180	\$185	\$190	\$195	\$197	\$202	\$202
First and-Seconds	1										
	2	165	180	180	180	186	195	194	201	202	202
	3	165	180	180	180	187	195	193	202	202	202
	4	168	180	180	182	189	195	194	202	202	202
First 1 Face	1	155	170	170	170	175	180	186	187	192	192
	2	155	170	170	170	176	185	184	191	192	192
	3	155	170	170	170	177	185	183	192	192	192
	4	158	170	170	172	179	185	184	192	192	192
No. 1 Common	1	115	125	125	130	137	145	150	152	160	160
	2	115	125	125	130	141	150	149	159	160	160
	3	115	125	125	130	143	150	148	160	160	160
	4	119	125	125	132	144	150	149	160	160	160
No. 2 Common	1	67	67	67	67	67	72	72	72	72	72
	2	67	67	67	67	67	72	72	72	72	72
	3	67	67	67	67	67	72	72	72	72	72
	4	67	67	67	67	70	72	72	72	72	72

Table 14.—Average quarterly prices for 4/4 Appalachian red oak,
by lumber grades, 1955-64

Lumber grades	Quarter	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
First-and-Seconds	1	\$185	\$185	\$195	\$205	\$205	\$200	\$200	\$200	\$200	\$200
	2	185	195	200	205	205	200	200	200	200	200
	3	185	195	200	205	205	200	200	200	200	200
	4	185	195	200	205	200	200	200	200	200	200
First 1 Face	1	175	175	185	195	195	190	190	190	190	190
	2	175	185	190	195	195	190	190	190	190	190
	3	175	185	190	195	195	190	190	190	190	190
	4	175	185	190	195	190	190	190	190	190	190
No. 1 Common	1	115	119	120	112	110	117	105	105	105	115
	2	115	120	120	110	115	112	105	105	105	115
	3	115	120	116	109	115	106	105	105	105	115
	4	115	120	115	110	116	105	105	105	108	116
No. 2 Common	1	80	86	73	67	75	78	70	70	74	77
	2	83	86	72	68	79	74	70	70	77	77
	3	83	84	68	71	80	71	70	72	77	77
	4	85	83	67	75	80	70	70	73	77	77
No. 3A Common	1	70	76	63	57	65	68	60	60	64	67
	2	73	76	61	58	69	64	60	60	67	67
	3	73	74	58	61	70	61	60	62	67	67
	4	75	73	57	65	60	60	60	63	67	67

Table 15.—Average quarterly prices for 4/4 Appalachian white oak,
by lumber grades, 1955-64

Lumber grades	Quarter	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
First-and-Seconds	1	\$200	\$215	\$220	\$220	\$220	\$220	\$220	\$220	\$220	\$220
	2	200	218	220	220	220	200	220	220	220	220
	3	200	220	220	220	220	220	220	220	220	220
	4	212	220	220	220	220	220	220	220	220	220
First 1 Face	1	190	205	210	210	210	210	210	210	210	210
	2	190	208	210	210	210	210	210	210	210	210
	3	190	210	210	210	210	210	210	210	210	210
	4	200	210	210	210	210	210	210	210	210	210
No. 1 Common	1	120	124	126	120	115	115	110	110	110	110
	2	120	128	123	115	115	115	110	110	110	110
	3	120	128	122	115	115	111	110	110	110	112
	4	120	128	120	115	115	110	110	110	110	112
No. 2 Common	1	80	86	73	67	75	78	70	70	74	77
	2	83	86	71	68	80	74	70	70	77	77
	3	83	84	68	71	80	71	70	72	77	77
	4	85	83	67	75	80	70	70	73	77	77
No. 3A Common	1	70	76	63	57	65	66	60	60	64	67
	2	73	76	61	58	66	64	60	60	67	67
	3	73	74	58	61	66	61	60	62	67	67
	4	75	73	57	65	66	60	60	63	67	67

Table 16.—Average quarterly prices for 4/4 Appalachian yellow-poplar,
by lumber grades, 1955-64

Lumber	Quarter	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
First-and-Seconds	1	\$200	\$200	\$200	\$200	\$200	\$195	\$195	\$195	\$195	\$198
	2	200	200	200	200	200	195	195	195	195	200
	3	200	200	200	200	195	195	195	195	195	200
	4	200	200	200	200	195	195	195	195	195	200
First 1 Face	1	180	180	180	180	180	175	175	175	175	178
	2	180	180	180	180	180	175	175	175	175	180
	3	180	180	180	180	175	175	175	175	175	180
	4	180	180	180	180	175	175	175	175	176	180
No. 1 Common	1	129	132	135	132	129	130	130	129	134	136
	2	129	135	135	130	130	130	130	129	135	136
	3	129	135	134	127	129	130	127	132	135	136
	4	130	135	132	127	129	130	129	133	135	136
No. 2A Common	1	79	89	88	86	86	88	89	88	93	94
	2	80	90	88	86	87	90	88	88	94	94
	3	80	89	87	85	87	90	88	92	94	94
	4	84	88	86	85	87	90	88	93	94	94
No. 2B Common	1	62	62	62	64	64	64	64	62	65	63
	2	62	62	62	64	64	64	64	62	65	63
	3	62	62	64	64	64	64	62	63	65	63
	4	62	62	64	64	64	64	62	64	65	63